WHAT IS CLAIMED IS:

1. A method of propagating changes made to a design model having one or more elements, comprising:

   identifying a change to a first element;

   creating a first step based on the structure of the first element or on a relationship between the first element and another element or elements;

   creating a second step based on the first step and the structure of one of the elements or on a relationship between two of the elements; and

   executing the steps to change at one or more elements to produce a model that accurately reflects the change to the first element.

2. The method of claim 1, wherein the element is a model component of a computer-aided design model.

3. The method of claim 2, wherein the computer-aided design model is a model of an architectural structure.

4. The method of claim 1, further comprising sorting at least some of the steps and the before executing the steps.

5. The method of claim 4, wherein the sorting is conducted using a depth-first search sorting method.

6. The method of claim 1, wherein the steps are stored in a step repository.

7. The method of claim 1, wherein one of the steps is a nul step.

8. The method of claim 7, wherein the nul step instigates regeneration.

9. The method of step 1, further comprising providing an atom associated with the first element, the atom marking changes made to the first element and expressing a dependency between one or more steps.

10. The method of step 1, wherein the second step depends on a relationship between the first element and a class of elements.

11. The method of claim 1, further comprising executing geometry steps associated with the first step or the second step.

12. The method of claim 1, further comprising identifying a locked step and limiting the execution of the locked step.

13. The method of claim 1, further comprising generating an error signal if the first step or the second step cannot be sorted.

14. A system for regenerating a design model, comprising:
    a model element;
    a step propagator that receives a first step that represents changes in the model element, and produces a second step that represents other changes in the model element that are dependent on the first step; and
    a step executer that executes the first step and the second step

15. The system of claim 14, further comprising a step sorter that sorts the first step and the second step according to dependencies between the steps.

16. The system of claim 14, further comprising an element table that stores the model element.

17. The system of claim 14, further comprising an atom associated with the model element, the atom linking the model element to the first step.

18. A method of propagating changes through a plurality of elements in a model, comprising:

    analyzing changes in a first element;

    generating a first step to carry out at least some of the changes in the first element;

    generating a second step based on a predefined relationship between the first element and one or more other elements, or on changes in a predefined relationship between the first element and one or more other elements;

    executing the first step and the second step on the plurality of elements to reflect the changes in the first element and the relationship between the first element and the one or more elements.

19. The method of claim 18, wherein the plurality of elements are elements in a computer-aided design model.

20. The method of claim 18, wherein the second step is one of a plurality of steps that can effect changes to the same element, and the second step is selected from the plurality of steps based on the first step.

21. The method of claim 20, wherein the second step is selected from the plurality of steps based on the generation of other steps.

22. The method of claim 18, further comprising sorting the first step and the plurality of steps to ensure that each step is executed after steps on which it depends are executed.

23. The method of claim 18, wherein one of the steps is a null step whose execution does not affect the model.

24. The method of claim 18, wherein locked steps are not executed.

25. The method of claim 18, wherein the plurality of steps is generated by prediction.

26. The method of claim 18, wherein the plurality of steps is selected from among a group of possible pluralities of steps.

27. The method of claim 18, wherein all of the steps on one element are executed before any steps on the next element.

28. The method of claim 18, wherein the first plurality of steps depends on the execution of the first step.

29. The method of claim 18, further comprising verifying the elements after execution for constraint satisfaction.

30. A method for updating data for a computer model for graphical display, comprising:

    analyzing an element in the computer model to determine whether the element has been touched by a change in the model;

    associating the elements with one or more steps that effect the change to the model;

    creating one or more additional steps that propagate changes to the computer model based on relationships between the element and other elements in the computer model;

    sorting the one or more steps and the one or more additional steps to eliminate interferences among the steps;

    executing the sorted steps.

31. A method of propagating changes made in one data element to a related data element, comprising:

    accumulating changes made in the one data element;

    identifying a predetermined number of possible mutually-exclusive sets of changes that may be made in the related data element;

    selecting the most appropriate set of changes by employing a predetermined selection standard;

121   testing the selected set of changes to determine whether it is an appropriate set of

122   changes.

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124   32. A method of propagating a change made to an element in a computer-aided design

125   model, comprising:

126   identifying an atom associated with the element;

127   generating a first step to carry out the change;

128   retrieving relationship information that defines predetermined relationships among

129   elements in the model;

130   generating propagated steps that depend on the change and the relationship

131   information;

132   sorting the steps; and

133   executing the steps to properly reflect the change to the element and to related

134   elements.